



inps journal

Indiana Native Plant Society

Fall 2020

Successful Control of an Invasive Species: The Story of my Neighborhood

By Beth Gazley

Japanese stiltgrass is a vexing invasive species. As my story explains, it may take a village (or a neighborhood), mixed with patience and persistence, to successfully control it.



Beth Gazley



Stiltgrass is easy to spot with its bright green leaf and distinctive silvery, off-center stripe.

For those on the hunt for garlic mustard, Japanese honeysuckle, or multiflora rose, stiltgrass is often found nearby (USDA, 2020).

What is stiltgrass?

Microstegium vimineum is an annual grass native to East Asia (USDA, 2020). Currently Japanese stiltgrass, also known as Nepalese browntop, is quickly spreading across Indiana. To date, however, this regulated invasive species is most frequent in southern Indiana (EDDMapS, 2020).

Stiltgrass's notoriety as an aggressive invasive comes from three factors. First is its high seed count per plant, and next is the easy dispersal of these tiny seeds by natural and human carriers. Recent hikes my spouse and I took in the Deam Wilderness and Yellowwood State Forest reinforced stiltgrass's ability to hitch a ride on shoes: we saw stiltgrass but only on the trail edges. Third and most relevant to any eradication plan is the seed's dormancy length: it can germinate five or more years after being deposited in soil (INPS, 2020).

Some aspects of stiltgrass might be viewed as beneficial. Ticks avoid it. But forest and conservation land managers rank stiltgrass alongside kudzu as one of their top problems (Kuppinger, 2000) due to its ability to displace native plant species including our treasured Indiana wildflowers, and to make permanent changes to soil pH and ecosystem function when uncontrolled. And because white-tailed deer (*Odocoileus virginianus*) do not eat it, they leave it to thrive as they carve their way through the native understory vegetation.

My neighborhood in Monroe County, a new subdivision of three dozen homes near Lake Monroe, offers three conditions favoring stiltgrass: we have mixed hardwood forests where stiltgrass thrives at forest edges, the moist and mesic soils it prefers, and plenty of disturbed areas, perfect for seed germination (USDA, 2020; Swearingen & Barger, 2016).

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Identifying stiltgrass as a neighborhood problem

We began our campaign to control stiltgrass through our already-established neighborhood email chain and Facebook page. Stage One was simple awareness. Most of us had noticed the attractive, almost bamboo-like leaves in large colonies but didn't realize what they were. Then I happened to bring in the Friends of Lake Monroe, a newly formed nonprofit, for a 2018 neighborhood meeting. Their presentation covered area invasive plants such as stiltgrass and their impact on the watershed's ecosystem. My eyes were opened!

As our neighborhood grew, and stiltgrass grew with it, I expect many of us spent multiple seasons trying to address it on our own. But as we learned how easily it spreads—for us, mainly by rain runoff, home construction equipment, and lawn care companies—we realized eradication had to be a collective effort. Here I tapped our local cooperative extension service. They referred me to Ellen Jacquart, who advised us on the right timing of our effort. And for stiltgrass, timing really matters.

In some ways a collective plan was an easy case to make to my neighbors because we live in

Stiltgrass - continued on page 11

The Aster Family

Botany Basics

From left: Flowering heads of field thistle (*Cirsium arvense*) with all disk flowers, two-flower *Cynthia* (*Krigia biflora*) with all ray flowers, and nodding burr-marigold (*Bidens cernua*) with both ray and disk flowers. BR = bracts, DF = disk flower, RF = ray flower.

By Grace Olsen

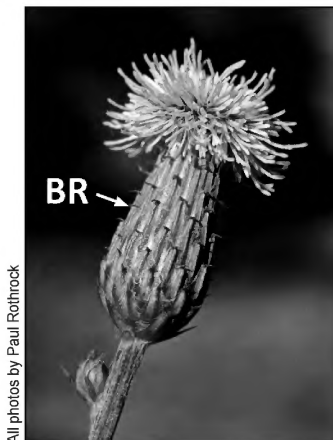
Most everyone, including myself, has fond memories of when they knowingly or unknowingly first encountered the aster family. For me, my most memorable experiences with the aster family are gifting my mother dandelions picked in the yard as a young girl, eating artichokes with my mother and brother (my father despised them), and planting marigolds with my grandmother in the little garden she had behind her house. While these are my personal memories, I am almost certain that you, too, have similar memorable experiences with species included in the aster family.

Asteraceae, the botanical name for the family, derives from the Greek word meaning star and refers to radiate heads of flowers we know as *daisies*. The aster family is the largest family of flowering plants in the northern latitudes, with 920 genera and 19,000 species found worldwide. The United States and Canada have a mere 346 genera and 2,687 species. Indiana has approximately 300 species. The orchid family is the only one larger than the aster family but it is largely a tropical family (Elpel, 2013).

What appears to be a single flower in species in the aster family is in reality a composite head of many smaller flowers. This accounts for an older name for this family, the Compositae (Funger, 2020). Each one of these little flowers will produce only one seed. Disk flowers have tiny fused petals with stamens

fused around a pistil with antennae-like stigmas. Ray flowers are big, lopsided “petal-like” flowers that often form the perimeter of a flower head. The aster family encompasses three main types of flowering heads: either all disk flowers, all ray flowers, or a combination of both. The head of flowers, in turn, is typically wrapped in green sepal-like “bracts” or “phyllaries” which are modified leaves surrounding the flower-bearing receptacle. The true sepals (found around individual flowers) have been reduced to small scales or awns, transformed into a hairy “pappus,” or may be lacking altogether. To provide a concrete example of the bracts, think again about the artichoke. The bracts are the many scale-like pieces that we pull off and eat.

Because of the large size of the aster family, it is subdivided into many subfamilies, and the subfamilies into “tribes.” Subfamilies native to North America include the chicory/dandelion subfamily (*Cichorioideae*), the thistle or artichoke subfamily (*Carduoideae*), and the aster subfamily (*Asteroideae*) (Elpel, 2013). In the chicory/dandelion subfamily the ray flowers typically overlap all of the way to the center with petals that have strap-like, parallel edges and squared-off ends. The stems and leaves of all species in this subfamily have a milky juice that is edible but bitter. Interestingly enough, these bitter substances are helpful as an appetizer to stimulate digestive secretions before a main



All photos by Paul Rothrock

Revealed

meal. Eating dandelions can help reduce problems with indigestion. Keep in mind that there are many other plants with a similar milky juice that are not related to dandelions and that can in fact be poisonous. Always check the blossom to confirm the species and consequent edibility of the plant.

The thistle subfamily was formerly classified as a tribe of the aster subfamily. It recently was reclassified to the level of subfamily by taxonomists based upon increased understanding of its genetic relationship with other members of the family. These species are often (but not always) spiny, bristly plants, usually with a flowerhead wrapped in multiple layers of overlapping bracts with bristly points. As a result the flowerheads look like tiny artichokes. The flowers within the bristly heads are all of the disk flower type.

The last subfamily is the large aster subfamily. This subfamily consists of numerous tribes, some with species radically different from others in the subfamily. The tribes in our Indiana flora include everlasting (e.g. pussytoes, *Antennaria*), chamomile (e.g. yarrow, *Achillea*), boneset (e.g. blazing star, *Liatris*), groundsel (e.g. ragwort, *Packera*), sunflower (e.g. black-eyed Susan, *Rudbeckia*), and aster (e.g. goldenrod, *Solidago*). The flowering heads in most of these tribes contain both ray flowers and disk flowers.

From growing marigolds with my grandma to picking dandelions for my mother, the aster

family secretly involved itself in many of my childhood memories. There is an unexpected false simplicity that accompanies members of the aster family. It shows how incredibly complex our living world is even when it does not appear so. It makes one approach the world, starting in our backyard, with a newfound appreciation for its vastness and intricacy.

References

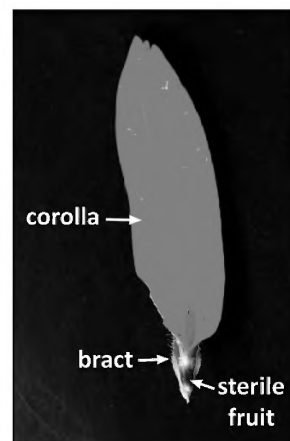
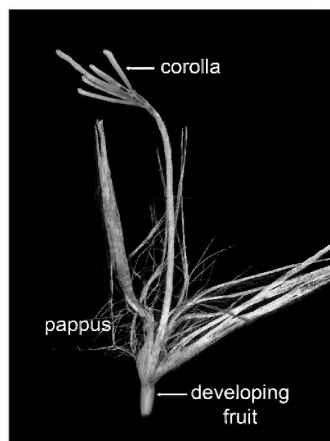
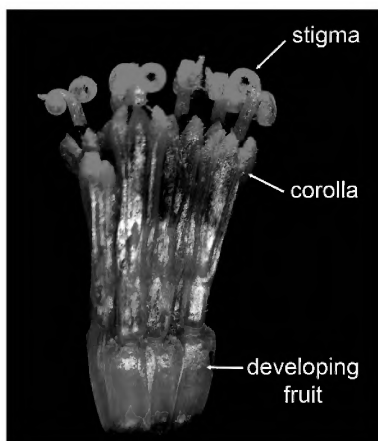
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Grace Olsen is a third-year undergrad student at Butler University with a major in Environmental Studies and minor in German. In her free time she enjoys baking, painting her nails, and caring for her houseplants.

Ready to test your knowledge?

Check out page 13 for a quiz!

*From left: Flowers of the Aster family: a cluster of ca. 6 disk flowers of whorled tickseed (*Coreopsis verticillata*), individual disk flower of field thistle (*Cirsium arvense*), and ray flower of black-eyed Susan (*Rudbeckia hirta*). Note that the flowers of whorled tickseed lack a pappus.*



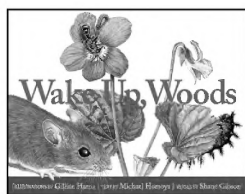
All photos by Paul Rothrock

Wake Up, Woods: An Unexpected Springtime Debut

By Melissa Moran

It began as an idea in 2016: to share the beauty of native plants, to convey that many other species depend on native plants for their livelihoods, and to provide this information in a way that would delight children. Approximately one year ago, this idea of a children's book about Indiana's native wildflowers became a reality.

Wake Up, Woods came to life with poetic verses from Shane Gibson, beautiful, botanically accurate illustrations from Gillian Harris, and amazing scientific facts from Mike Homoya. In October 2019, *Wake Up, Woods* was released by Rubber Ducky Press and immediately distributed to the more than 130 individuals and



Carolyn Wamsley

Young hiker at Ritchey Woods engrossed by the *Wake Up, Woods* StoryWalk®

organizations who contributed to its publication. A few weeks later, the book sold out of its first printing at the INPS Annual Conference in Fort Wayne, and the Indiana State Library¹ announced that *Wake Up, Woods* was their selected title for the National Book Festival.

A second printing was needed for the 2019 holiday season, and a third printing was undertaken to prepare for spring wildflower season. More than 6,100 copies were in print as of July. Then COVID-19 arrived, and the multiple spring conferences and events that INPS had planned to attend to promote *Wake Up, Woods*

were cancelled. It felt like an enormous setback, not being able to share the book and the amazing woodland wildflowers it features during its premiere spring season!

Unexpectedly, and with an amazing display of heart and creativity, Hoosiers began to interact while following "shelter-in-place." When the woodland wildflowers began to emerge from their winter slumber, naturalists, park staff, literary leaders, and families found creative ways to share their delight in the flowers using *Wake Up, Woods* to guide their adventures. While INPS, of course, knows and loves the book because we were part of its creation, it has been marvelous to witness the book take on a life of its own. Because of social media, INPS members can actually see just how much people are enjoying it!

Here are some glimpses from Spring 2020:

- Indiana Humanities' Indiana Authors Awards Facebook page², featured kids shouting out the names of the plants. Note how the photo of the actual trillium next to Gillian Harris' illustration matches perfectly!
- A book review by Helen Frost, one of Indiana's best-known children's authors, had beautiful commentary³.
- Reconnecting to our Waterways⁴, a contributor to the book's creation, asked Marion County naturalists to read each of the twelve floral spreads.
- *Wake Up, Woods* was featured in StoryWalks® around Indiana, including Ritchey Woods⁵ in Hamilton County, Carmel Clay Parks & Recreation⁶, and Eagle Creek Park⁷.

Most exciting is the book's inclusion on the shortlist for the 2020 Indiana Authors Award in the children's category!⁸ So while the spring debut of *Wake Up, Woods* was not what was originally envisioned, we certainly have witnessed a warm reception. Indeed, we know that the dream to create a children's book that inspires children and adults alike to look a little closer at the biodiversity around them is coming true.

Web Links

¹<https://blog.library.in.gov/wake-up-woods-chosen-as-indianas-national-book-festival-title/>

²<https://www.facebook.com/watch/?v=1178549055829875>

³<https://www.indianaauthorsawards.org/review/wake-up-woods/?fbclid=IwAR2nKBCuoXhYIAD->

— continued at right

INPS Is Not Immune to COVID-19

By Ellen Jacquart

Is there a restart button for 2020, or even better, a fast forward? Likely most of us have never experienced a year with as many challenges. INPS has not been immune to the ramifications of a pandemic. But those pale when compared to the tragedy that individual families experience due to the virus. It is the hope of INPS leadership that all members do all in their power to remain safe and healthy and our hearts go out to those who are directly affected by personal illnesses or illnesses among those they love.


The preparations for this fall edition of INPS Journal take place in July and August, so much may transpire before you receive this quarterly. Nonetheless, as of press-time some realities of COVID-19 are already affecting INPS. We trust that you, the membership, will understand and vigorously support our community and the timeless importance of native plants.

The casualties of 2020 include not just the cancellation or curtailment of numerous local events but also the delay of our next in-person Annual Conference until 2021. Instead of our usual Conference, this year we will hold a virtual Annual Meeting for a few hours on November 14 in its place.

At this Annual Meeting you'll hear about the INPS year, hear about native plants, and we'll hold the election of our nominated slate of Directors for the 2021 term. You'll receive details on the Annual Meeting and how to sign up by email in early October.

Many of us renew our INPS membership as we register for the Annual Conference. However, with such a turbulent year we suggest that you take a moment right now to renew. This is best done online at indiananativeplants.org/about-us/membership/. Renewals by mail go to Indiana Native Plant Society, Attn: Membership, P.O. Box 501528, Indianapolis, IN 46250.

And as you renew, consider making an additional donation to INPS. You may wish to designate one of our Grant Programs. Letha's Fund sponsors outdoor youth opportunities. INPS Biodiversity Grants support research, demonstration gardens, and conservation projects.

Finally, mark your calendar: the 2021 Annual Conference, which will be November 13, will be held at 502 Event Center in Carmel and will feature speakers that were originally planned for the 2020 Annual Conference. The co-chairs of the 2021 conference will be Mary Damm and Wes Homoya. 

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qhpUE0

⁴<https://vimeo.com/ourwaterways>

⁵https://www.facebook.com/watch/live/?v=550587858927592&ref=watch_permalink

⁶<https://www.facebook.com/watch/?v=2394475307519638>

⁷<https://www.facebook.com/watch/?v=546497506069961>

⁸<https://www.indianaauthorsawards.org/childrens-shortlist-2020/>

Melissa Moran is a member of the Wake Up, Woods Committee (along with Ruth Ann Ingraham and Carolyn Wamsley) and belongs to the Central Chapter. Her home gardens have been transformed by INPS Plant Sale & Auction purchases and plant rescues over the past 15+ years.

Virtual Annual Meeting:

November 14, 2020

time TBA

Next Annual Conference:

November 13, 2021

502 Event Center

Carmel, IN

A Seed of An Idea: Auburn

By Janet Canino, Ph.D.

Last fall a seed was planted. It didn't need soil, water, or even sunlight. It was a seed of an idea that germinated when Martha Bishop-Ferguson of Riverview Native Nursery talked about highlighting the growing native plant movement in Northeast Indiana, specifically in the town of Auburn. With a look at a map we realized that three places we thought about highlighting were all within a ½ mile of one another, with sidewalks conveniently connecting each stop.

library building some of the answers to that game included little bluestem (*Schizachyrium scoparium*), purple-coneflowers (*Echinacea* spp.), blue wild indigo (*Baptisia australis*), Virginia spiderwort (*Tradescantia virginiana*), prairie dropseed (*Sporobolus heterolepis*), northern sea-oats (*Chasmanthium latifolium*), columbine (*Aquilegia canadensis*), spicebush (*Lindera benzoin*), black chokeberry (*Aronia melanocarpa*), black-eyed Susans (*Rudbeckia hirta*), red osier (*Cornus sericea*), and

serviceberry (*Amelanchier* spp.). We then made an impromptu stop at the home of Jim and Karen Farlow, as they have begun incorporating native plants into their backyard. It was a great way to see how every native plant helps. The splash of brilliant orange from the butterflyweed (*Asclepias tuberosa*) was a big hit, as well as the cooling shade provided by their native eastern redbud (*Cercis canadensis*) trees.

Next, we landed at the Teen Library. Last summer two of the librarians, Luke Martin and Katherine Noonan, worked with the youth

to turn lawn into a biodiversity hotspot. Luke shared with us how all these new natives came to be and how the space will be used as an outdoor classroom for library programs.

Before we journeyed on, I asked participants to play an abbreviated version of one of my favorite sustainability activities that I use with elementary students. Each person had to pick a square foot of lawn and had 10 seconds to count the number of living creatures they saw on it. Then we moved over to the native plants and repeated the exercise. The highest number of living creatures found on the lawn was 1, with most people finding 0. With the native plants, people were regularly counting 3-5 critters and someone got as high as 8. It was more proof that growing native has a noticeable effect on local ecology.

Next we made our way to Auburn's 6th and Main Street. In 2018, the city was open to removing invasive species (like periwinkle [*Vinca minor*]) from their landscaping list and replacing them with Indiana natives, such as



C. J. Canino

Eckhart Public Library's new biodiversity hotspot demonstrates the difference in the number of species that are supported by native plantings compared to a mowed lawn.

Our June 27th final itinerary included stops at the Eckhart Public Library (the Teen library and the Main library), a stop at the downtown area of 6th and Main Street, and a visit to two urban homeowners' yards. We sprinkled in some public art and historic sites, as well.

Of course, we had not anticipated we'd be in the middle of a global pandemic, but we improvised, just as we did with the unfavorable weather forecast for the day. To increase everyone's safety, our chapter made mask-wearing mandatory and social distancing was expected. We had one person in charge of getting contact information for each participant. We let guests know that we would be in touch if we found out anyone had tested positive for COVID-19. Several people told us how much they appreciated that step.

Despite our Saturday forecast wobbling between an 80% chance of thunderstorms down to a mere 50% chance of storms, we had about 40 participants. Throughout our tour we played "Guess this plant!" At the main

Walking Tour of Native Plants

New Jersey tea (*Ceanothus americanus*), stonecrop (*Sedum* sp.), purple prairie-clover (*Dalea purpurea*), and butterflyweed. To replace the Japanese lilacs (*Syringa* sp.), a serviceberry (*Amelanchier* sp.) cultivar was used. The city even installed a sign highlighting the native plants. Not all of the new downtown landscaping was completely native, as there are still some daylilies (*Hemerocallis fulva*) and the ever-popular Karl Foerster's feather reed grass (*Calamagrostis ×acutiflora* 'Karl Foerster') in the design. However, it was a relief to know that no known invasive species would be used.

Moreover, this native plant area is now home to a gorgeous public art mural that prominently features the dependent relationship of monarch butterflies (*Danaus plexippus*) on milkweeds (*Asclepias* spp.). Dave Schlemmer was one of the mural's artists, along with Amy Buchs. Dave shared how you scale up a design idea to make it fit on the side of a two-story building. He also showed some of the geometric stencils used in their newest mural, the *Impressionism Tunnel*.

Our penultimate stop was visiting the yard of Bill Ward, who works for the Dekalb County Soil and Water Conservation District. The native plant landscape around his historic home includes mountain mint (*Pycnanthemum* sp.), spotted Joe Pye weed (*Eutrochium maculatum*), common milkweed (*Asclepias syriaca*), false Solomon's seal (*Maianthemum racemosum*), and native violets (*Viola* spp.).

En route to our final destination we briefly paused outside the historic home of Auburn's co-founder, Wesley Parks, and saw the city's other major public mural, a depiction of a 1935 Auburn Boattail Speedster's dashboard and steering wheel. The mural celebrates Auburn's nickname: "Home of the Classics."

Soon enough we reached the Auburn Brewing Company (ABC) where INPS member Cody Burniston had offered to replace a non-native, weedy spot with beautiful natives. Owners, Emma and Josh Meltcalf, told us how they were open to the idea of planting natives. This location is now a certified "Grow Native Garden." Native species we identified at ABC included little bluestem, purple-coneflowers, butterflyweed, and lance-leaf coreopsis

(*Coreopsis lanceolata*).

Our day proved fun, enjoyable, educational, and storm-free. Be sure to check out the colorful photos taken by our student volunteer, C.J. Canino, and posted to: [Facebook.com/NortheastINPS](https://www.facebook.com/NortheastINPS). We hope to see you at our next event. Until then, keep growing native!

Janet is a member of the Northeast Chapter and an Indiana Master Naturalist.



Attendees enjoyed two murals on the tour: monarch butterflies and milkweed above, and a 1935 Auburn Boattail Speedster's dashboard at right.



C.J. Canino



Installing a sign like the one at left from Auburn's West 6th Street native garden highlights the native plants and shows the community that they can be both beneficial and beautiful, hopefully encouraging more people to incorporate natives into their own landscaping.

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Mission

To promote the appreciation, preservation, scientific study, and use of plants native to Indiana.

To teach people about their beauty, diversity, and importance to our environment.

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Share online: Send information for posting to webmaster@indiananativeplants.org.

Chapter news

Central

Although in person meetings and hikes were cancelled due to COVID-19, several plant rescue work parties were held at Holliday Farms, a housing development underway in Zionsville with very rich woodlands. Strict COVID protocol was followed. Given the size of the new development, it is anticipated that rescue activities will continue into the fall.

By means of a June webinar the Central Chapter co-hosted an event with the Hamilton County Soil and Water Conservation District: *Invasive Species and the Terrestrial Plant Rule in Indiana*. The chapter co-hosted another webinar on July 16, *Indiana's Wild Climate Workshop*, with the Indiana Wildlife Federation. The event explored Indiana's place in the climate crisis.

On July 8, the SWAT Team continued their efforts at removing bush honeysuckle in the 210-acre Sodalis Nature Park in Hendricks County.

South Central

Chapter members thoroughly enjoyed a final pre-COVID-19 event in early February when we gathered at Gillian Harris's home and studio. Gillian, the renowned artist for *Wake Up, Woods* shared examples of the raw paintings and drawings and the creative process that she employed. The combining of computer technology and old-fashioned handwork was fascinating.

During late June-early July chapter members were invited to individually tour the oldest homeowner-based forb-enriched prairie planting in Indiana. Phyllis Schwitzer personally installed her acre planting in the early 1990s, about the same time as the Indiana Department of Natural Resources - Division of Nature Preserves began to think about this tool for their holdings. In recent years Phyllis has successfully reduced the presence of tall grass species and enhanced the abundance of diverse forbs.

Northeast


The 50th anniversary of Earth Day fell during the stay-at-home period due to COVID-19, a major disappointment. Nonetheless, the chapter moved forward with adjusted versions of other activities.

With participants social distancing and wearing masks, two Saturdays in May were devoted to woodland plant rescue. Event organizer Beth Ricketts and five other members rescued wild geranium (*Geranium maculatum*), woodland phlox (*Phlox divaricata*), Dutchman's breeches (*Dicentra cucullaria*), squirrel corn (*Dicentra canadensis*), jack-in-the-pulpit (*Arisaema triphyllum*), bishop's cap (*Mitella diphylla*), wild ginger (*Asarum canadense*), and other natives from a private woods in Roanoke, Ind., where the homeowners planned some construction work. Members collected about 500 plants that were part of the chapter's plant swap or sold to support chapter activities.

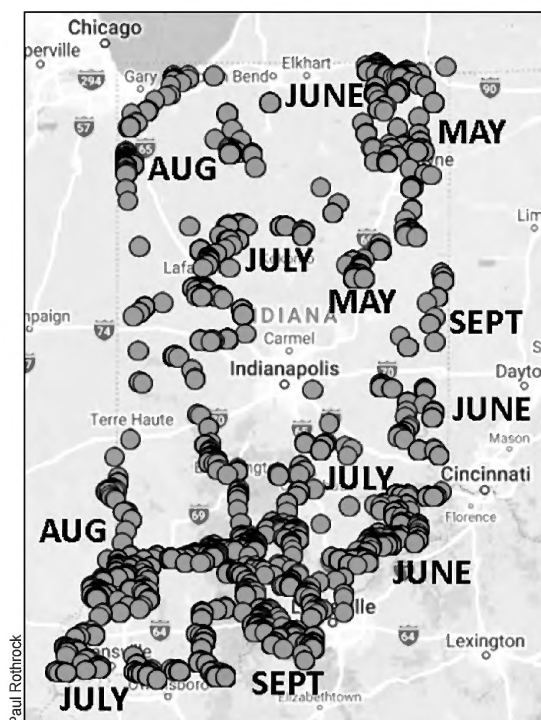
The annual member native plant swap took place on June 13 at Eagle Marsh in Fort Wayne. Rescued plants from April accounted for over \$500 in sales for the chapter. Members also brought plants from their own homes and woods for swapping. These included royal catchfly (*Silene regia*), purple-coneflower (*Echinacea* sp.), and fire pink (*Silene virginica*). Stewardship committee member Freya Berntson taught an invasive species lesson afterward at the marsh.

Before the year ends, the chapter anticipates a seed collection hike with Blue Heron Ministries and a fall annual meeting, probably virtual, at Merry Lea Environmental Center.

Southwest

As with other chapters, the Southwest Chapter has avoided in-person meetings this summer and has explored the brave new world of Zoom meetings. We have continued to actively exchange questions and ideas on Facebook, including how to help chapter member Jeremy Ross add more native plants to the Pike Central High School butterfly garden. 

Flora – continued from back cover



Paul Rothrock

Map showing locations of Deam's collecting sites in 1915, plus the months he visited each region of Indiana. His coverage of the state was so thorough that one can almost see the outline of Indiana.

to name a few. When you dig into the 20th century botanical literature, Deam specimens are cited frequently. And a number of his collections have served as type specimens or resulted in a new taxon being named in his honor. My favorite example is one of Indiana's endangered species of beardtongue, *Penstemon deamii*.

The work on the "Flora of Indiana" began in earnest in 1905, as the conservation movement was hitting its stride across the U.S. At the time, our state, like most, lacked even a list of species one might expect to find within its borders. Travel was challenging

– rail travel was best, otherwise horse, bicycle, or on foot were your options. Deam's collecting shifted into high gear with the purchase in 1915 of a Ford Model T touring car, his first "weed wagon." That year he gathered over 3,000 specimens and reached all four corners of the state. No record has survived telling how many flat tires had to be repaired while traversing rough roads or how many cans of beans and cups of strong coffee were heated on his camp stove.

The personal industry of Charlie Deam is legendary. His motto was "work like hell and never spend a cent." Indirectly it was this intensity that started him on his personal study of plants. While overworking himself in developing a successful drug store business, he exploded at a customer for frittering away his time. Charlie needed to relax – a hobby might help. As he and Stella began outings from their home near Bluffton, a new interest,

or perhaps obsession, germinated. Aided by a young biologist in town, Bruce Williamson, Deam learned the basics he needed. Over time, through the Indiana Academy of Science, he developed deep relationships with academic botanists from Butler, Indiana, and Purdue Universities. As a result, despite only a year of formal college, Deam grew into one of the premier field botanists of his era. Thanks to his prosperous drug store, he was able to relinquish day-to-day operations to a partner, J.R. Spivey, and devote himself to his passion.

Through his studiousness and business sense Deam became Indiana's first State Forester (1909). While leading the new State Board of Forestry, he conducted practical experiments on the recently acquired Clark County State Forest. He published "Trees of Indiana" (1912, 1932), "Shrubs of Indiana" (1924), and, with the help of IU botanist Paul Weatherwax, "Grasses of Indiana" (1929).

In his later years, Plain ol' Charlie Deam, as he liked to be called, received numerous accolades for his work and service to the state. He studied the flora long enough to see disturbing changes, especially numerous introduced species, pollution, and loss of habitat. Deam, quick to see the problem of invasive species, expressed strong negative opinions about multiflora rose (*Rosa multiflora*) as a "conservation" planting "... it should only be recommended for the bonfire."

It would be fascinating to hear what Charlie would say if he walked among us today. He would be heartened to see the present day nature preserve system, something he recommended a century ago, and would smile at how many preserves are sites or are near to sites that he botanized long ago. I bet he would be amazed by the enthusiasm embodied by the Indiana Native Plant Society and would be an active leader. For sure he would still say "botany is my game and I play it hard!"

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Paul Rothrock is the INPS Journal editor and Associate Curator Emeritus of the Indiana University Herbarium.



from Kriebel, "Plain Ol' Charlie Deam"

Portrait of Charles C. Deam shortly before publication of the "Flora of Indiana"

Stiltgrass — continued from page 1

a community with conservation easements and we pay attention to our natural setting. But I also passed on Ellen's opinion that our neighborhood had one of the worst infestations in the county. A little neighborhood pride is always a good motivator! My neighbor Stephanie became an ally and change agent until a growing wedge of residents "joined the party." I fronted the cost of herbicide and a spray kit as a loaner to neighbors. My husband even weed-whacked the empty lot next door (with the owner's permission and gratitude). To maintain momentum, this spring Stephanie hosted a (socially-distanced) gathering at her home to discuss invasives control.

The last ingredient in our eradication plan will be persistence. The seeds have a long half-life. As I write this, July begins, and with it the task of tapping the neighborhood social media again, offering identification help and the loan of herbicide. I am also going to produce a tip-sheet for the neighborhood, featuring the excellent INPS et al. "Guide" (see References).

Based on the plant's phenology and with Ellen's advice, my neighbors and I have settled on four ways to eradicate stiltgrass:

1. Spray with herbicide. Spray actively growing stiltgrass anytime from June to September. Pulling is the only effective approach once seedheads emerge (from September onward) as the seeds will still drop and germinate after herbicide treatment. Clethodim 2E is a selective post-emergence herbicide that kills only grasses (don't forget to add a surfactant).
2. Cut with mower or weedwhacker before seeds emerge, around July or August. Pay attention, as mowing must happen early enough so that seeds haven't set, but also late enough in the growing season so new flowers don't emerge. While this will reduce the number of seeds, stiltgrass is able to produce seeds right at ground level, so mowing will never eliminate a stiltgrass population. Mowing will not work after September when the plant has seeded.
3. Weed small populations by hand. Stiltgrass has small roots and is easy to pull, although disturbing the soil may encourage new seed germination so these sites must be revisited. The experts suggest it's best to wait until late summer to hand-pull large patches. Pulled plants must be bagged to avoid leaving seeds

in the area. Do not compost!

4. Pay attention to dispersal patterns and repeat the process for multiple years. This campaign can be organized among clusters of homes, based on the direction of rain runoff and other factors.

We are far from finished, but we now have a multi-year plan for dealing with stiltgrass among ten families or so. We have another good reason to connect with others, and we have developed a more holistic view of the ecosystem we inhabit (Mack et al., 2000).

The USDA (2020) observes that the best way to prevent large stiltgrass invasions is by ensuring small patches don't get bigger. I hope in future years to talk to new neighbors about how we might expand the eradication effort.



Beth Gazley

The patch Beth is attacking next. This was not here two years ago – the seeds were carried by runoff but uncontrolled patches quickly spread.

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Beth Gazley is a member of the INPS South Central Chapter.

Native Plant Profile

Touch-Me-Not

By Mike Homoya

Its name may be “touch-me-not,” but go ahead and touch it anyway.

Now you might be experiencing an inner conflict about this, not knowing whether to follow my advice, or to heed the warning of touch-me-not! So what should you do? Think about it for a while, but before you decide, read on for more details.

Two species of touch-me-not occur in Indiana. The spotted – which has orange-colored flowers – and the pale touch-me-not belong in the genus *Impatiens*. They look virtually identical in the vegetative state, but their flowers, in addition to color differences, have a slightly different shape. In both, the

leaves and stems are delicate, the latter translucent with watery sap. In preferred growing conditions, which are typically moist woodlands and stream corridors, plants may reach five feet or more in height.

You might recognize the genus name as being the same as the very popular ornamental garden flower which goes by

“*Impatiens*” for both its scientific and common name. The derivation of the name is an interesting one, but before we get into that, let’s first consider the plant’s other names.

One that is quite fitting is jewelweed. Some believe this name becomes apparent after taking a leaf and placing it underwater. Once submerged it appears as a shimmering piece of silver foil, illustrating its brilliance as the leaf is gently rolled and turned. Others point to the droplets of dew that collect on the leaf margin, believing they look like polished jewels. And there are those who believe jewel refers to the plant’s beautiful flowers, likening them to 19th century earrings, hence another name, lady’s ear-drops.

Touch-me-nots are quite utilitarian. Many people swear to the efficacy of the plant’s watery sap as a preventative for poison ivy rash. Claims also have been made that the sap is helpful in soothing an established case of poison ivy rash, as well as for the painful irritation caused by stinging nettles. Some find the seeds to be quite tasty, sort of like black walnuts.

But people aren’t the only ones that utilize the plant. Hummingbirds find touch-me-not nectar irresistible, as do bees and other nectar seeking insects. Large patches of touch-me-nots are almost a sure bet in attracting and keeping hummers in the area.

Okay, okay! Enough already! Why touch, or not, a touch-me-not and just what is the derivation of *Impatiens*? Getting a little impatient, are we? Well, so too is our featured herb.

Indeed, *Impatiens* is named for its impatience! Touch-me-nots are so exceptionally eager – make that impatient – to disperse their seeds, that the capsules literally go ballistic. The BB-sized seeds, which are held under tension within the elastic walls of the touch-me-not capsule, await the proper trigger. Then, with the slightest touch or movement of a ripe capsule, a miniature explosion ensues, spraying seeds like shrapnel from a hand grenade. All this, complete with sound effects – you can often hear a snapping sound as the seeds are launched – is not only entertaining, but actually helps the plants in seed dispersal. No losers here.

Top: The pale touch-me-not (*Impatiens pallida*) shown here, as well as its orange counterpart (*I. capensis*), occurs throughout Indiana.

Bottom: A ripe capsule ready to pop and the spent remains.



Paul Rollnick

Florathon 2020

Now do you believe me that touch-me-nots are for touching? Then what are you waiting for? But be forewarned, this activity is like eating potato chips.

"Betcha can't touch just one."

Our thanks to Outdoor Indiana magazine for permission to reprint this article.

Mike Homoya, author of several wildflower books, has recently retired as Indiana's State Botanist. He is a past president of INPS.

By Barbara Homoya

Someone has said that this may be the first time in history that we can save the human race by lying in front of the TV and doing nothing. Yet, some intrepid INPS members, in the spirit of Teddy Roosevelt, who said, "Do what you can with what you have, where you are," ventured out into nature this spring to participate in the INPS Florathon 2020.

Between April 18 and May 31 seven individuals, plus five more on two family teams, surveyed 13 counties in search of native herbaceous plants in bloom. The highest species total seems to be of great interest, and here are the results: first place, Always Be Botanizing (Mike, Barb, and Wes Homoya) with 94 species; second place, David Mow with 87; and his previous years' Bloomin' Stellarias' teammate, Ellen Jacquart, placed third, finding 75 species in bloom.

Perhaps even more noteworthy, however, is that those 12 individuals raised over \$3,000 for Letha's Youth Outdoors Fund! Over 60 donors contributed – quite encouraging to see despite the pandemic. In addition, 15 new members were added to the INPS membership roll.

Considering this may be the only INPS fundraiser in 2020 (with the cancellation of the Annual Plant Sale and the Annual Fall Conference), I must say that I am very proud of these participants and salute the individuals who solicited so many sponsors. As well, INPS thanks those donors who gave so generously during these challenging times.

Next year we hope to return to our team format and have the best and most successful Florathon ever! A challenge to each INPS chapter is to field at least one or two teams. In previous issues of the INPS Journal, we have highlighted the experiences of Florathon participants and hope to continue this in the future, so watch for their stories in upcoming issues. Without exception, Florathoners have expressed having an enjoyable and challenging learning experience. Please start now to assemble a team for Florathon 2021! If you have any questions or want to find a team to join, you can contact Barbara Homoya, Florathon Chair.

Barbara Homoya is a Central Chapter member and has participated in the past three INPS Florathons.

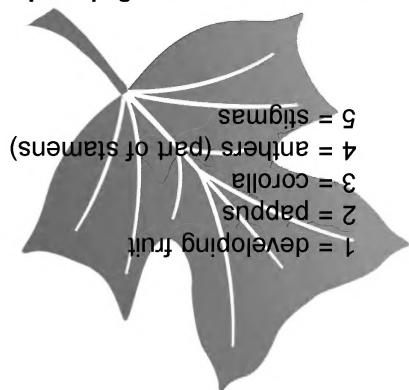


Paul Rothrock

TEST YOUR KNOWLEDGE:

*This is a ray flower of the common dandelion (*Taraxacum officinale*). Can you name its parts?*

Flip the page over for the answers!



Weiler-Leopold

Natural Area Profile

By Bob Easter

An October hike in Indiana can bring about a satisfying sense of peace. The blazing hot days of summer are passing and the landscape prepares to sleep through another winter. What was recently verdant, dotted with the bright blooms of summer, is now changing into an infinite spectrum of natural hues, punctuated with the bright pigments of red, orange, and yellow. Most Hoosiers' minds probably drift to dramatic scenes of the forest canopy of Brown County when they think of fall colors. There is no doubt that yellow and gold of the tuliptree and maple contrasting with the surrounding

ties to conservation and land management.

The family of Emanuel Weiler, founding dean of Purdue's School of Management and the Krannert Graduate School, once owned a section of the property. The family of A. Carl Leopold, an internationally known plant physiologist and son of the renowned naturalist Aldo Leopold, also owned a section of the land. Acquired in 1999 with the support of the Indiana Heritage Trust, the Roy Whistler Foundation, the Sycamore Audubon Society, the Weiler, Leopold, and Sanna families, and nearly two hundred additional individuals, families, groups, and businesses, Weiler-Leopold holds a place among the earliest owned properties

by NICHES Land Trust. Weiler-Leopold sits adjacent to the later acquired NICHES properties of Black Rock Barrens and Birdfoot Barrens Nature Preserves, making a combined 308 acres of protected habitat (NICHES, 2020).

The diversity of this natural area is impressive, with 370 plant species documented to date. Siltstone glades and barrens with remnant prairie species and glacial relict white pine stitch together upland prairie restoration, bottomland reforestation, and open oak woodland. Prescribed fire, an annual deer cull, and constant attention to invasive species have brought out the best in

this rare habitat over the last 20 years, and it gets better every year.

An autumn hike might reveal the delicate white flowers of the ladies' tresses orchids (*Spiranthes cernua*) mixed with moss and lichen, waiting to recharge with the last days of warm sun as the leaves begin to fall. The yellow of late blooming elm-leaved goldenrod (*Solidago ulmifolia*) and gray goldenrod (*Solidago nemoralis*) are balanced in this final floral display with blue



Glenn Chiang

Weiler-Leopold and adjacent Black Rock Barrens and Birdfoot Barrens boast a total 308 acres of habitats ranging from siltstone glades and barrens to open woodlands.

canopy can be awe-inspiring, but a walk through the mixed prairie, oak savanna, and barrens has just as much to offer. NICHES Land Trust's Weiler-Leopold and Black Rock Barrens in Warren County provide to the public two one-mile long loop trails that display the richness of the transition zone between the prairies to the west and the eastern forest.

Weiler-Leopold Nature Preserve refers to the renowned former owners, two families with strong

Nature Preserve

wood-aster (*Symphyotrichum cordifolium*) and the odd tall bellflower (*Campanulastrum americanum*) or great blue lobelia (*Lobelia siphilitica*) refusing to give up their missions to bring forth the next generation.

Look up as well! You may see a bald eagle (*Haliaeetus leucocephalus*) soaring in silhouette along the bedrock ridge, over 100 feet above the Wabash River. There has been an active eagle's nest on nearby Collier's Island in the Wabash since the species was reintroduced 30 years ago. Another familiar sign of the turning season is the bugling of sandhill cranes (*Grus canadensis*) as they circle high above, making their way south.

Through the golden glow of the understory hickories (*Carya* spp.) and the still green canopy of oaks (*Quercus* spp.), you might spot the scarlet red of the blackgum (*Nyssa sylvatica*) in a valley between siltstone ridges, and beyond them the unmistakable soft green foliage of native white pine (*Pinus strobus*). Familiar species like Virginia creeper (*Parthenocissus quinquefolia*), often overlooked in the spring and summer, are given renewed presence with a transition to crimson red, especially when contrasting with the peeling white bark of an American sycamore (*Platanus occidentalis*), now bare of its leaves.

The fall fruits of Virginia creeper, greenbrier (*Smilax* spp.), woodland grape vines (*Vitis* spp.), flowering dogwood (*Cornus florida*), blackhaw (*Viburnum prunifolium*), prairie rose (*Rosa setigera*), and even poison-ivy (*Toxicodendron radicans*) provide an ample buffet for year-round birds and migratory species alike. Everything from wild turkeys (*Meleagris gallopavo*) and bobwhite quail (*Colinus virginianus*) to gray

catbirds (*Dumetella carolinensis*), American robins (*Turdus migratorius*), and yellow-rumped warblers (*Setophaga coronata*) can be seen taking advantage of this bounty. It has been said that yellow-rumped warblers will overwinter in a region based on a good crop of poison-ivy berries! (Weeks, 2012)

Fall hikes on NICHES lands offer a wide variety of natural experiences and an opportunity to reflect upon your relationships, especially with nature. Get out and enjoy. Consider becoming a NICHES member (or a member of another local land trust) and partner in protecting and conserving our local biodiversity for future generations.

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Bob Easter is stewardship director for NICHES Land Trust and a member of the West Central Chapter of INPS.



Bob Easter

Nodding ladies' tresses orchid

Autumn is the best time of year to look for goldenrods in bloom.



Ming Li



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“Flora of Indiana” – An 80th Anniversary

Some Personal Reflections

By Paul Rothrock

“I want to get this book [the “Flora of Indiana”] out before Father Time gets me. I am gradually slipping” ... but “I did my darnedest, and in it you have my measure.”

—Charles C. Deam

By every measure Charlie Deam’s “Flora of Indiana” receives high praise. This year, 2020, marks the 80th anniversary of this monumental, ground-breaking publication.

My own introduction to Deam came in the early 1970s while a student at The Pennsylvania State University. I stumbled upon his large tome in Pattie Library. It mystified me – why a massive work for Indiana? And why so long ago in 1940? After all, few other states, such as Pennsylvania, had yet to complete their floras. Michigan and Ohio only had their monocot volumes.

Why Indiana is answered in large part by the personality of Deam himself. During our recent digitization effort of his herbarium, now housed at IU, I had the privilege of handling each of his 51,586 specimens plus another 1,863 by his wife Stella. These were impressive, clearly the work of a Type A perfectionist personality. Pre-1940 no one had amassed such a rigorous body of specimens for a regional flora. His collections were both numerous and of A+ quality.

Deam, I discovered, had the work habits of another famous scientist, Charles Darwin. Darwin was focused and corresponded widely with fellow scientists; both true of Deam. Peppered throughout the IU collection are letters and notes from famous botanists of the era who had received Deam’s specimens for their study and annotation – names like Agnus Chase (grasses), Frederick Hermann (sedges), Francis Pennell (beardtongues), Truman Yunker (dodders), Ernest Palmer (hawthorns), Ezra Brainerd (violets),

Flora – continued on page 10



from Kriebel, "Plain Ol' Charlie Deam"

Charlie Deam seated beside his 1915 “weed wagon.”